

## THE VALIDITY OF *GALAXIAS KAYI* RAMSAY AND OGILBY

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IN 1886 Ramsay and Ogilby described a species of *Galaxias* from Fifth Creek, South Australia, under the name of *kayi*, but when Regan revised the Galaxiidae in 1905 he identified this fish with *olidus* which Gunther (1866, p. 209) based on a single specimen, the locality being given as ? Queensland. Several points of disagreement between the descriptions of *G. olidus* and *G. kayi* seemed to lay this identification open to question, and certain circumstances noted in the course of an investigation of the New Zealand *Galaxias* suggested the possibility of *G. olidus* being a New Zealand species. In order to clarify the position the writer applied to Dr. Ethelwynn Trewavas of the British Museum who very kindly made an X-ray examination of the type for the purpose of determining the number of vertebrae. The result shows that the type of *G. olidus* is a deformed specimen with the vertebrae fused in several places. Evidence of about 50 vertebrae can be discerned, but no reliance can be placed on the count as it has been found in deformities of this nature occurring in known species that several vertebrae may be entirely unaccounted for. Dr. Trewavas states that the type is incomplete and that in the jar with it there is a headless specimen in which, however, the vertebral column is intact. This specimen has 57 vertebrae. An examination of the X-ray photographs (which are deposited in the South Australian Museum) does not enable the present writer to determine if these two specimens are specifically identical, but reveals nothing inconsistent with their being so. If their specific unity is assumed, it is necessary to separate *G. olidus* and the form described by Ramsay and Ogilby on account of the number of vertebrae. Three specimens of this South Australian form which were made available through the kindness of Mr. H. M. Hale, Director of the South Australian Museum, have 51, 51, and 52 vertebrae (without hypural). Ramsay and Ogilby record 53 in the original description. A range from 51 (the minimum in *G. kayi*) to 57 (the number in the headless specimen) is greater than has been observed in any *Galaxias* and cannot be accepted as occurring in a single species. On the other hand, if the type of *G. olidus* is regarded as distinct from the headless specimen associated with it, the sole representative of this species is a single, deformed and incomplete specimen of uncertain locality with which it is impossible to identify any fish. It is therefore necessary to reinstate the name *G. kayi* for the South Australian fish, as it appears to be the first to have been regularly applied. Other species recorded from the locality are *G. schamburgkii* Peters (1868), *G. rostratus* Klunzinger (1872) and *G. nigothorak* Lucas (1892), the original descriptions of

which are not available. Regan's account of these species is poor and suggests that he had no personal acquaintance with them, but the length of the pectoral fin of *G. schomburgkii*, which he records as extending more than half of the distance to the ventral, seems sufficient to separate this species from the present form, in which the ratio is  $\cdot 41$ – $\cdot 42$ . In *G. rostratus* the anal fin is said to originate a little behind the origin of the dorsal, while in *G. kayi* the anal origin is beneath the 8th–10th dorsal ray. The species *G. nigothorak* needs no consideration as it post-dates *G. kayi*. An enquiry into the validity of these species is desirable but would require to be carried out in the locality concerned. There are indications that at least some of them are based on single specimens.

The status of *G. olidus* depends on what view is taken of the headless specimen associated with the deformed type. If the headless specimen is accepted as practically a co-type it may be possible to identify the species with some existing form, but otherwise the name *olidus* must be regarded as invalid. The solution of this problem may be assisted by access to the X-ray photographs of the two specimens.

A description of the present specimens of *kayi* is given below.

#### GALAXIAS KAYI Ramsay and Ogilby.

*Galaxias kayi* Ramsay and Ogilby, Proc. Linn. Soc., N.S. Wales, v. i (2), 1886, p. 6.

*Galaxias olidus* Regan, Proc. Zool. Soc., ii, 1905, p. 381. B. 7–7. D. iii–iv, 7–9. A. iv–vi, 8–10, V. 7–7. Vertebrae (without hypural 51–52).

Jaws about equal, without or with slightly developed lateral canines, entoptergoidal teeth strong, 7 on each bone, gill rakers short, 8–10 on lower limb of anterior gill arch, pyloric caeca short but definite. Maxillary scarcely extending to middle of eye, head  $5\cdot 07$ – $5\cdot 28$  in standard length, dorsal inserted at  $\cdot 68$ – $\cdot 73$  of standard length, least depth of tail  $\cdot 55$ – $\cdot 58$  of the distance from rear of dorsal to base of caudal, caudal emarginate with tips of lobes rounded. Pectoral extending  $\cdot 41$ – $\cdot 42$  of the distance from its axil to the ventral, ventral inserted at  $\cdot 51$ – $\cdot 54$  of the standard length, extending  $\cdot 51$ – $\cdot 53$  of the distance from its root to the anal, anal originating beneath 8th–10th dorsal ray (all counted), branched rays of anal subdivided into 4. Maximum total length observed 79 mm.

#### LITERATURE CITED.

Gunther, A. (1866) : Cat. Fish., British Museum, xi.

Ramsay E. P., and Ogilby J. D. (1886) : "Descriptions of some new Australian Fishes," Proc. Linn. Soc., N.S. Wales, L, p. 6.

Regan, C. T. (1905) : "A Revision of the Fishes of the Family Galaxiidae." Proc. Zool. Soc., London, ii, pp. 85–112.